

Application No. 10/707,465
Technology Center 1763
Amendment dated March 16, 2006
Reply to Office Action of December 16, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A process comprising the steps of:
forming an aluminized surface within an internal cavity of a component
by placing within the internal cavity a material comprising metallic particles of an
aluminum source and then heating the material and the component, wherein
during heating some of the metallic particles oxidize and sinter to form adherent
particles that are sintered to the aluminized surface; and then
contacting the aluminized surface with an aqueous caustic hydroxide
solution until the adherent particles are removed from the surface.

Claim 2 (Original): The process according to claim 1, wherein the
solution contains at least 100 grams/liter of potassium hydroxide and the
balance essentially de-ionized water.

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Claim 3 (Original): The process according to claim 1, wherein the solution contains about 175 to about 225 grams/liter of potassium hydroxide and the balance essentially de-ionized water.

Claim 4 (Original): The process according to claim 1, wherein the solution consists of about 175 to about 225 grams/liter of potassium hydroxide and the balance de-ionized water.

Claim 5 (Original): The process according to claim 1, wherein the aluminizing step comprises a slurry aluminizing process in which the material comprises the metallic particles suspended in a liquid vehicle.

Claim 6 (Original): The process according to claim 1, wherein the adherent particles comprise metallic particles whose outer surfaces are oxidized.

Claim 7 (Original): The process according to claim 1, wherein the forming step results in oxide particles being sintered to the aluminized surface, and the oxide particles are removed from the aluminized surface by the contacting step.

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Claim 8 (Original): The process according to claim 1, wherein the contacting step is performed at a temperature of about 66°C to about 88°C.

Claim 9 (Original): The process according to claim 1, wherein the contacting step is performed at atmospheric pressure.

Claim 10 (Original): The process according to claim 1, wherein the contacting step is performed for a duration of at least two hours.

Claim 11 (Original): The process according to claim 1, further comprising the step of agitating the solution while the solution contacts the surface.

Claim 12 (Original): The process according to claim 11, wherein the agitating step is performed with ultrasonic energy at a frequency of about 20 kHz to about 40 kHz and a power level of about 80 to about 450 watts per liter of the solution.

Claim 13 (Original): The process according to claim 11, wherein the agitating step is performed for a duration of at least two hours.

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Claim 14 (Original): The process according to claim 1, wherein the component is a gas turbine engine component and the internal cavity is a cooling passage.

Claim 15 (Currently amended): A process comprising the steps of:
forming an aluminized surface within an internal cavity of a gas turbine engine component by injecting a slurry into the internal cavity and then heating the slurry and the component, the slurry comprising metallic particles of an aluminum source, oxide particles, and an activator that are mixed and suspended in a liquid vehicle, the activator vaporizing during heating to react with the metallic particles and form a volatile aluminum halide, wherein during heating some of the metallic particles oxidize and sinter to form oxidized particles that are sintered ~~sinter~~ to the aluminized surface;

removing the oxidized particles from the aluminized surface by immersing the aluminized surface in an ultrasonically-agitated solution containing at least 100 grams/liter of potassium hydroxide and the balance essentially de-ionized water; and then

rinsing the internal cavity with water to remove the solution.

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Claim 16 (Original): The process according to claim 15, wherein the solution consists of potassium hydroxide and de-ionized water.

Claim 17 (Original): The process according to claim 15, wherein the solution consists of about 175 to about 225 grams/liter of potassium hydroxide and the balance de-ionized water.

Claim 18 (Original): The process according to claim 15, wherein some of the oxide particles sinter to the aluminized surface during the forming step and are subsequently removed from the aluminized surface during the removing step.

Claim 19 (Original): The process according to claim 15, wherein the removing step is performed at a temperature of about 71°C to about 77°C and at atmospheric pressure for a duration of about two to eight hours.

Claim 20 (Original): The process according to claim 15, wherein the component is a turbine blade.